

# GaAs MMIC SPDT FET Switch

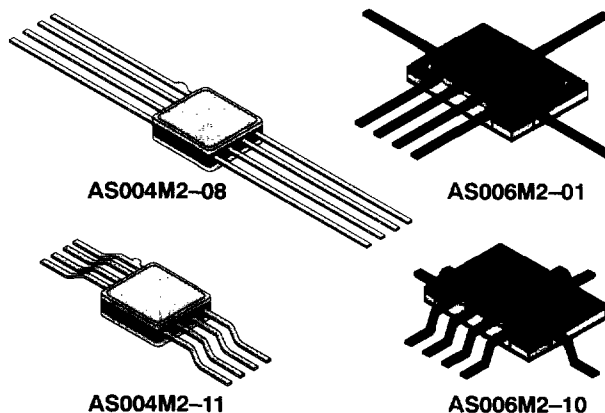
## Non-Reflective DC-6 GHz



AS006M2-01, AS006M2-10, AS004M2-08, AS004M2-11

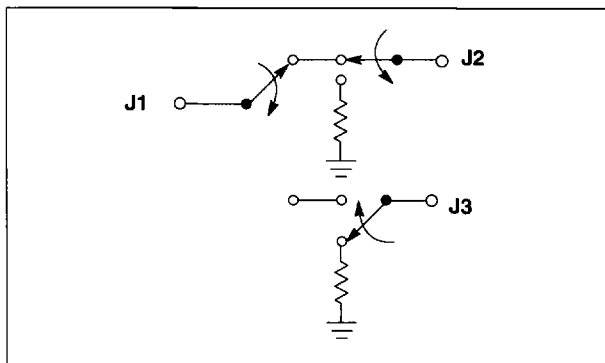
### Features

- Broadband DC-6 GHz
- Non-Reflective
- Low DC Power Consumption
- Excellent Intermodulation Products\Temp. Stability
- Meets MIL-STD-883 Screening Requirements



### Description

The GaAs SPDT non-reflective chip is offered in four separate packages for convenience of mounting. At the higher frequencies, 4-6 GHz, the 7 lead flat pack has optimum performance since all leads are RF isolated. These devices are useful as modulators and switches in military, instrumentation and commercial communication applications.



### Electrical Specifications at 25°C

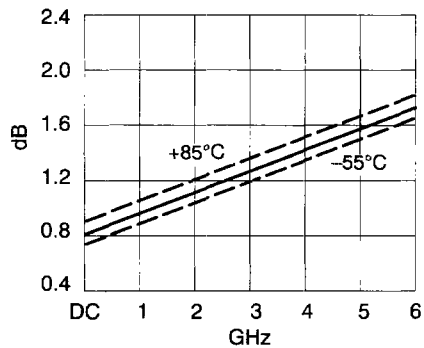
Option		-01, -10	-08, -11		
Insertion Loss <sup>1</sup>	DC-0.5 GHz	0.9	0.9	dB	Max
	DC-1 GHz	1.0	1.0	dB	Max
	DC-2 GHz	1.2	1.2	dB	Max
	DC-4 GHz	1.6	1.6	dB	Max
	DC-6 GHz	1.9	-	dB	Max
Isolation	DC-0.5 GHz	60	60	dB	Min
	DC-1 GHz	55	52	dB	Min
	DC-2 GHz	50	43	dB	Min
	DC-4 GHz	42	30	dB	Min
	DC-6 GHz	30	-	dB	Min
VSWR	DC-1 GHz	1.3:1	1.3:1		Max
	DC-2 GHz	1.5:1	1.5:1		Max
	DC-4 GHz	1.8:1	1.8:1		Max
	DC-6 GHz	2.0:1	-		

### Operating Characteristics at 25°C

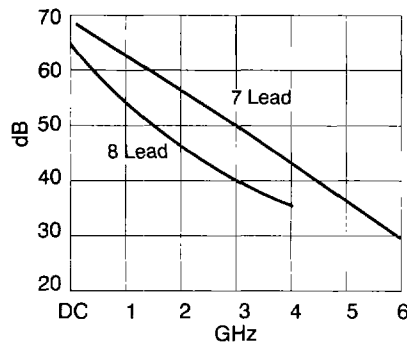
Impedance	50Ω Nominal		
Switching Characteristics			
RISE, FALL (10/90% or 90/10% RF)	3	ns	Typ
ON, OFF (50% CTL to 90/10% RF)	6	ns	Typ
Video Feedthru <sup>2</sup>	20	mV	Typ
Input Power for 1 dB Compression			
Control Voltages (Vdc)	0/-5	0/-8	
0.5-6 GHz	+24	+30	dBm Typ
0.001 GHz	+16	+20	dBm Typ
Intermodulation Intercept Point (For Two-Tone Input Power up to +13 dBm)			
Intercept Points	IP2	IP3	
0.5-6 GHz	+68	+46	dBm Typ
0.001 GHz	+57	+35	dBm Typ
Control Voltages			
V <sub>0</sub> (Low)	0 to -0.2V @ 20 μA Max		
V <sub>0</sub> (High)	-5V @ 50 μA to -9V @ 200 μA Max		

1. Insertion Loss changes by 0.003 dB/°C.  
 2. Measured in 500 MHz bandwidth with 1 ns risetime pulse.

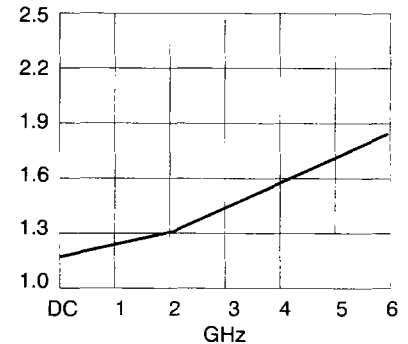
## Performance Data



Insertion Loss vs. Frequency



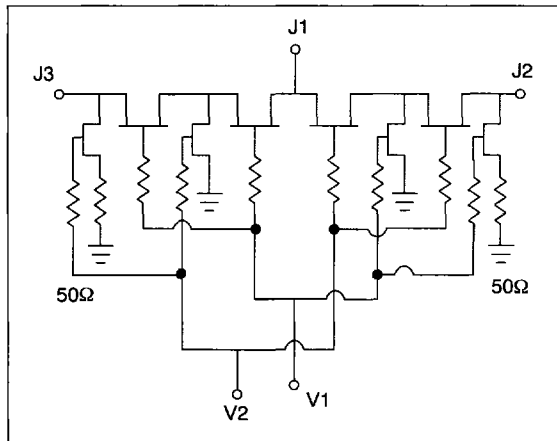
Isolation vs. Frequency



VSWR vs. Frequency

2

## Switch Schematic



## Truth Table

V1	V2	J1-J2	J1-J3
-5	0	Insertion Loss	Isolation
0	-5	Isolation	Insertion Loss

## Absolute Maximum Ratings

RF Input Power: 2W > 500 MHz 0/-8V  
 0.5W @ 50 MHz 0/-8V  
 Control Voltage: +0.2V, -10V  
 Operating Temperature: -55°C to 125°C  
 Storage Temperature: -65°C to 150°C  
 Thermal Resistance: 25°C/W

## Pin Outs

